

AMENDMENT TO THE CLAIMS

Claims 1-16 and 30 are Canceled.

17. (Currently Amended) An assembled rubber-to-metal bonded article, comprising at least a first metal member, a second metal member and a cured rubber member press fit between and bonded to said first metal member and said second metal member, and wherein:
  - a. said rubber member is the reaction product of at least one elastomer, at least one rubber-to-metal adhesive adjuvant and at least one curative;
  - b. said rubber member resides in a state of compression at a temperature in the range of from about -20°C to about 120°C in the absence of an external compressive force on the article; and
  - c. said bonding of said rubber member to at least one of said metal members is achieved in the substantial absence of an adhesive layer between said rubber member and said at least one metal member; and
  - d. ~~said metal members are substantially undeformable by the force of said state of compression or by the forces applied during assembly or during use.~~
18. (Previously presented) The article of claim 17 wherein said bonding of said rubber member to said metal members is achieved in the substantial absence of an adhesive layer between said rubber member and both of said metal members.
19. (Original) The article of claim 17 wherein said elastomer is one selected from:
  - a. ethylene-alpha-olefin elastomer;
  - b. ethylene/acrylic elastomer,
  - c. polychloroprene rubber,
  - d. acrylonitrile butadiene rubber,
  - e. hydrogenated acrylonitrile butadiene rubber,
  - f. styrene-butadiene rubber,
  - g. alkylated chlorosulfonated polyethylene,
  - h. epichlorohydrin,
  - i. polybutadiene rubber,
  - j. natural rubber,

- k. chlorinated polyethylene,
  - l. brominated polymethylstyrene-butene copolymers,
  - m. styrene-butadiene-styrene- block copolymer,
  - n. styrene-ethylene-butadiene-styrene block copolymer,
  - o. acrylic rubber,
  - p. ethylene vinyl acetate elastomer,
  - q. silicone rubber, and
  - r. a combination of any of at least two of the foregoing.
20. (Previously presented) The article of claim 17 wherein said elastomer is selected from ethylene propylene copolymer; ethylene-propylene diene terpolymer; ethylene octene copolymer; ethylene butene copolymer; ethylene octene terpolymer; and ethylene butene terpolymer.
21. (Previously presented) The article of claim 17 selected from a torsional vibration damper, a rubber-viscous vibration isolation damper, a vibration isolator, a vibration isolation mount, a vibration damper, and a coupling.
22. (Original) The article of claim 17 wherein said rubber-to-metal adhesive adjuvant is selected from:
- a. a metal salt of an unsaturated carboxylic acid;
  - b. a maleinized polybutadiene resin;
  - c. a phenylene dimaleimide; and
  - d. a combination of at least two of the foregoing.
23. (Original) The article of claim 17 wherein said at least one curative is selected from:
- a. a free-radical producing agent;
  - b. sulfur; and
  - c. a combination thereof.
24. (Original) The article of claim 17 wherein said elastomer composition is the reaction product of at least two said curatives, each said curative having an activation temperature distinct from the other of said curative.
25. (Previously presented) The article of claim 17 in the form of a torsional vibration damper.

26. (Previously presented) The article of claim 17 wherein said state of compression is not the result of a post-assembly metal-forming step.
27. (Previously presented) The article of claim 17 wherein said cured rubber member is partially cured to a state of cure of from about 20% to about 99% in a shape-forming mold prior to assembly of said article.
28. (Previously presented) The article of claim 27 wherein said cured rubber member is substantially fully cured.
29. (Previously presented) The article of claim 28 wherein said bonding of said rubber member to said metal members is achieved in the substantial absence of an adhesive layer between said rubber member and said metal members.
30. (Canceled)
31. (Previously presented) The article of claim 17 wherein said rubber member is in a state of compression at a temperature in the range of from about 10°C to about 40°C.
32. (Previously presented) The article of claim 17 wherein said cured rubber member is partially cured to a state of cure of from about 50% to about 95% in a shape-forming mold prior to assembly of said article.
33. (Previously presented) The article of claim 17 wherein said cured rubber member is partially cured to a state of cure of from about 70% to about 90% in a shape-forming mold prior to assembly of said article.
34. (Previously presented) The article of claim 29 selected from a torsional vibration damper, a rubber-viscous vibration isolation damper, a vibration isolator, a vibration isolation mount, a vibration damper, and a coupling.
35. (Previously presented) The article of claim 29 wherein said rubber-to-metal adhesive adjuvant is selected from:
  - a. a metal salt of an unsaturated carboxylic acid;
  - b. a maleinized polybutadiene resin;
  - c. a phenylene dimaleimide; and
  - d. a combination of at least two of the foregoing.
36. (Previously presented) The article of claim 29 wherein said at least one curative is selected from:
  - a. a free-radical producing agent;

- b. sulfur; and
  - c. a combination thereof.
37. (Previously presented) The article of claim 29 wherein said elastomer composition is the reaction product of at least two said curatives, each said curative having an activation temperature distinct from the other of said curative.
38. (Previously presented) The article of claim 17 wherein said cured rubber member is an annular rubber member; said two metal members define an annular gap; and wherein the rubber member is press fit in the annular gap.
39. (Previously presented) The article of claim 38 wherein said cured rubber member is partially cured to a state of cure of from about 20% to about 99% in a shape-forming mold prior to assembly of said article.
40. (Previously presented) The article of claim 39 wherein said cured rubber member is substantially fully cured.
41. (Previously presented) The article of claim 40 in the form of a torsional vibration damper.
42. (New) The article of claim 24 wherein each of said two curatives is an organic peroxide; and the activation temperatures of said two curatives differ by at least five degrees centigrade.
43. (New) The article of claim 42 wherein the activation temperatures of said two curatives differ by at least fifteen degrees centigrade.
44. (New) The article of claim 43 wherein the activation temperatures of said two curatives differ by at least twenty-five degrees centigrade.
45. (New) The article of claim 44 wherein the first of said two curatives comprises 1,1-Di-(t-butylperoxy)-3,3,5-trimethylcyclohexane or equivalents thereof, and the second of said two curatives comprises 2,5-dimethyl-2,5-Di-(t-butylperoxy) 3-hexyne or equivalents thereof.
46. (Currently Amended) The article of claim 17 wherein said state of compression is at least from about one percent (1%) to sixty percent (60%) compression.
47. (Currently Amended) The article of claim 46 wherein said state of compression is at least from about five percent (5%) to about fifty percent (50%) compression.

48. (Currently Amended) The article of claim 47 wherein said state of compression is ~~at least from~~ about ten percent (10%) to about forty percent (40%) compression.
49. (Currently Amended) A rubber-to-metal bonded article selected from a torsional vibration damper, a rubber-viscous vibration isolation damper, a vibration isolator, a vibration isolation mount, a vibration damper, and a coupling, comprising at least a first metal member, a second metal member and a cured rubber member press fit between and bonded to said first metal member and said second metal member, and wherein:
  - a. said rubber member is the reaction product of at least one elastomer, at least one rubber-to-metal adhesive adjuvant and at least one curative;
  - b. said rubber member resides in a state of compression of ~~at least from~~ about one percent (1%) to sixty percent (60%) at a temperature in the range of from about -20°C to about 120°C in the absence of an external compressive force on the article; and
  - c. said bonding of said rubber member to at least one of said metal members is achieved in the substantial absence of an adhesive layer between said rubber member and said at least one metal member.
50. (Currently Amended) The article of claim 49 wherein said state of compression is ~~at least from~~ about five percent (5%) to about fifty percent (50%), wherein the elastomer is selected from ethylene propylene copolymer; ethylene-propylene diene terpolymer; ethylene octene copolymer; ethylene butene copolymer; ethylene octene terpolymer; and ethylene butene terpolymer, and wherein the rubber-to-metal adhesive adjuvant is selected from:
  - a. a metal salt of an unsaturated carboxylic acid;
  - b. a maleinized polybutadiene resin;
  - c. a phenylene dimaleimide; and
  - d. a combination of at least two of the foregoing.